

US EPA ARCHIVE DOCUMENT

**EVALUATION OF METAL RELEASE FROM CONTAMINATED FIELD AND FORMULATED REFERENCE SEDIMENTS RESUSPENDED UNDER LABORATORY CONDITIONS.** Mark G. Cantwell (Cantwell.Mark@epamail.epa.gov), R.M. Burgess, US Environmental Protection Agency, Atlantic Ecology Division, Narragansett, RI 02882 and J.W. King, Graduate School of Oceanography, University of Rhode Island, Narragansett, RI 02882.

In aquatic systems where metal-contaminated sediments are present, the potential exists for dissolved metals to be released to the water column when sediment resuspension occurs. The release and partitioning behavior of sediment-bound, toxic heavy metals is not well understood during resuspension events. In this study, metal release from sediments during resuspension was evaluated using a series of formulated reference sediments with known physical and chemical properties which were amended with heavy metals (i.e., Cd, Cu, Hg, Ni, Pb, Zn). Sediments with varying quantities of acid volatile sulfide (AVS), total organic carbon (TOC), and different grain size distributions were resuspended under controlled laboratory conditions to evaluate their respective effect on dissolved metal concentrations. Overall, AVS had the greatest effect on limiting release of dissolved metals, followed by grain size and TOC. Predictions of dissolved concentrations of Cd, Ni, Pb and Zn were generated based on the formulated sediment AVS:metal molar ratios. Model results were evaluated by comparison to measured dissolved metal concentrations in contaminated field sediments resuspended under identical conditions. Dissolved metal concentrations released from the resuspended field sediments were low overall, in most cases lower than predicted values. Overall, results indicate that for sulfidic sediments, low levels of the study metals are released to the dissolved phase during short-term resuspension.

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